REMARKS

Reconsideration of this application, as presently amended, is respectfully requested. Claims 1-22 are pending in the present application. Claims 1-22 stand rejected.

Claim Rejections – 35 U.S.C. §103

Claims 1-6, 9-14 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Chakraborty et al.** (USP 7,110,454, previously cited) in view of **Toklu et al.** (USP 6,549,643, previously cited). Claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over **Chakraborty et al.** in view of **Toklu et al.** and in view of **Yilmaz et al.** (Shot Detection Using Principal Coordinate System, newly cited). Claim 16 was rejected under 35 U.S.C. §103(a) as being unpatentable over **Chakraborty et al.** in view of **Toklu et al.** and in view of **Yilmaz et al.** Claims 7 and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Chakraborty et al.** in view of **Toklu et al.** and in further view of **Blanchard** (USP 6,347,114, previously cited). Claims 15 and 17-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over **Chakraborty et al.** in view of **Toklu et al.** and in further view of **Park et al.** (USP 6,597,738, previously cited). Claim 21 was rejected under 35 U.S.C. §103(a) as being unpatentable over **Nakamura et al.** (US 2001/0051516, previously cited) and in view of **Pan et al.** (US 2002/0080162, newly cited) in view of **Gonsalves et al.** (US 6,392,710, previously cited). Claim 22 was rejected under 35 U.S.C. §103(a) as being unpatentable over **Nakamura et al.** and in view of **Pan et al.** in view of **Gonsalves et al.** and further in view of

Gotoh et al. (US 5,801,765, previously cited). For the reasons set forth in detail below, these rejections are respectfully traversed.

Summary of significant differences between claimed invention and Chakraborty

Because **Chakraborty** is the main reference applied against independent claims 1, 4, 9, 13 and 14, a summary of the significant differences between the presently claimed invention and **Chakraborty** will be provided below with reference to the attached figure. The features of claim 1 will be used as an example in the discussion below. As shown in the attached figure, **Chakraborty** teaches a system the segments a video into shots/scenes (where a shot and a scene are considered the same in **Chakraborty**). The arrows in the figure indicate shot/scene change locations where the video has been segmented into the shot/scene. Thus, **Chakraborty** basically teaches the claimed "a shot segmentation device to segment the video into respective shots". However, this is where the teachings of **Chakraborty** end. The end result in **Chakraborty** is a video segmented into shots, as shown in the attached figure.

As noted above, the presently claimed invention segments shots; however, the presently claimed invention goes further than **Chakraborty**. That is, as shown in the lower portion of the attached figure, the presently claimed invention classifies a plurality of continuous shots into a scene. More specifically, the presently claimed invention uses shot density and motion intensity of the segmented shots ("a calculator for calculating shot density DS of the video from the respective segmented shots"; "a calculator for calculating motion intensity of the respective segmented shots") to classify a scene into a dynamic scene or a static scene, "where the dynamic

scene and the static scene respectively include a plurality of continuous shots and are thus a larger unit than a shot".

Thus, as shown in the attached figure, **Chakraborty** only teaches the shot segmentation portion in the figure. The presently claimed invention covers the entire figure.

Patentability Arguments

Initially, applicants respectfully remind the Examiner that all claim limitations must be considered in judging the patentability of the claim against the prior art (see Manual of Patent Examining Procedure (MPEP) §2143.03).

Further, the limitations of the preamble must be considered when the preamble recites limitations of the claim when read in context of the entire claim. More specifically, MPEP §2111.02 states "If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165-66 (Fed. Cir. 1999). In the present claims, the recitations in the body of the claims, e.g., "the sequence of shots", "the dynamic scene", "the static scene" in claim 1, clearly refer to the recitations of the preamble and thus bring the limitations of the preamble into the body of the claim. As such, according to the established case law, the preamble limitations of the present claims must be considered.

Applicants point out that all limitations must be considered, including those in the preamble, because the present Office Action clearly does not consider all limitations in the claims.

More specifically, first, in the previous Amendment, claims 1, 4 and 9 were amended to recite "respective ***segmented*** shots". This amendment was made to clarify that the various claimed operations are performed on video that has been segmented into shots by a shot segmentation device. For example, claim 1 recites "a calculator for calculating shot density DS of the video from the respective ***segmented*** shots" and "a calculator for calculating motion intensity of the respective ***segmented*** shots" and "a dynamic/static scene classifier for classifying the sequence of shots...based on the shot density and the motion intensity of the respective ***segmented*** shots." However, none of the rejections in the present Office Action address or point out where the references teach or suggest performing the claimed operations on "respective *segmented* shots". Instead, the rejections in the present Office Action simply address operations performed on "respective shots" and ignore that the operations are performed on *segmented* shots. See, e.g., Office Action, page 2, line 7; and page 4, lines 14 and 19. (It is also noted that **Chakraborty** does not teach performing the claimed operations on "respective shots" because no shot has been determined at the time the operations relied upon are performed.)

Second, it is respectfully submitted that the present Office Action does not consider the claim language added to independent claims 1, 4, 9, 13 and 14 by the previous Amendment that clarifies that the claimed "shot" and "scene" are different. Fore example, claim 1 recites "where the dynamic scene and the static scene respectively include a plurality of continuous shots and

are thus a larger unit than a shot". However, throughout the rejection the Examiner makes no distinction between a shot and a scene (see, e.g., Office Action, page 2, line 11; page 3, line 9; page 4, line 2).

Thus, the current rejections of independent claims 1, 4, 9, 13 and 14 are improper for at least the reason that the Examiner has not considered all limitations in these claims.

Moreover, the Examiner's ***Response to Arguments*** basically ***acknowledges and confirms*** that the **Chakraborty** reference does not disclose or suggest performing the various claimed operations on segmented shots. More specifically, the **Chakraborty** system detects transitions between shots to produce a shot list of segmented shots (**Chakraborty** defines a "shot" and a "scene" synonymously as a continuous recording of one or more video frames, and defines the "transition between shots" as "cuts" or "scene changes"). *The **end result** of the teachings of **Chakraborty** is a "shot list" of **segmented shots***. In other words, the operations that the Examiner cites to teach the claimed operations on segmented shots are performed prior to segmentation of the video into shots, and are not performed on segmented shots. The Examiner ***acknowledges and confirms*** that **Chakraborty** does not perform operations on segmented shots as the Examiner states ***throughout*** the Office Action that the operations of **Chakraborty** identify a "***potential*** shot/scene change location" and a "***candidate*** scene change location" and "scene change ***candidates***" (see Office Action, page 2, lines 11, 16 and 20). That is, potential or candidate points for a scene or shot change are being identified, and the shot has not yet been segmented when the various operations relied upon by the Examiner are being performed. All of

the operations of **Chakraborty** cited by the Examiner against the claimed invention are performed prior to any shot being segmented.

Further, unlike the claimed invention, as is clear from, e.g., col. 7, lines 52 and 62 of **Chakraborty**, a "shot" and a "scene" are considered the same in **Chakraborty**. The Examiner basically acknowledges that the shot and scene in **Chakraborty** are the same because the Examiner uses shot and scene change synonymously throughout the Office Action (see, e.g., page 2, line 11; page 3, line 9; page 4, line 2, etc.). Therefore, **Chakraborty** does not disclose or suggest the claimed distinction between a shot and a scene.

Claims 1, 4, 9, 13 and 14

Claims 1, 4, 9, 13 and 14 were amended to clarify that the various types of scenes that are detected in these claims are composed of a plurality of continuous shots.

As noted above, in contrast to the claimed invention, **Chakraborty** defines a "shot" and a "scene" as the same thing. **Chakraborty** is unrelated to classifying a scene including a plurality of continuous shots. Moreover, as argued in the response filed on September 5, 2008, **Toklu** does not alleviate any of the deficiencies of **Chakraborty.**

In contrast to the invention recited in claims 1, 4, 9, 13 and 14, the end result in **Chakraborty et al.** and **Toklu et al.** is a segmented shot. The only process that appears to be performed on the segmented shot of **Chakraborty** and **Toklu** (i.e., after the shot is segmented) is selecting a keyframe (see, e.g., col. 14, lines 52-55 of **Chakraborty**). In contrast, the claimed invention performs various processes (e.g., calculates shot density, calculates motion intensity,

classifies a dynamic/static scene) after the shot is segmented in order to classify a scene, which scene includes a plurality of continuous shots.

In summary, Applicants submit that none of the cited references disclose or suggest any of the features recited in claims 1, 4, 9, 13 and 14, other than the claimed "a shot segmentation device to segment the video into respective shots," because none of the references teach or suggest performing the claimed operations on the segmented shots or classifying a scene including a plurality of continuous shots.

Claim 14

Claim 14 was amended to clarify the operation of the "commercial scene detector". More particularly, claim 14 was amended to recite "and classifying the scene as a commercial scene in response to the comparing indicating that the number of shot boundaries detected during the predetermined interval is greater than the predetermined reference number".

Although the Examiner apparently ejected claim 14 over only **Chakraborty et al.** and **Toklu et al** (discussed above), the Examiner also rejects claim 14 by combining the newly cited **Yilmaz** with **Chakraborty et al.** and **Toklu**.

First, **Yilmaz** does not alleviate any of the deficiencies of **Chakraborty et al.** and **Toklu** discussed above.

Second, the Examiner relies on **Yilmaz** to teach the claimed "classifying the scene as a commercial scene in response to the comparing indicating that the number of shot boundaries detected during the predetermined interval is greater than the predetermined reference number".

However, **Yilmaz** does not disclose this feature. More specifically, **Yilmaz** calculates the ***mean*** of eigenvectors (v3) in a ***shot*** and compares the ***mean*** with a threshold value to label the **shot** as an advertisement (see page 4, col. 2, lines 11-14). In contrast, unlike **Yilmaz**, in accordance with the claimed invention, the scene (which is a larger unit than a shot) is classified as a commercial scene by a comparison "indicating that the number of shot boundaries detected during the predetermined interval is greater than the predetermined reference number". **Yilmaz** does not use a number of shot boundaries in a predetermined interval to classify a commercial scene. **Yilmaz** uses a mean of eigenvectors in a shot.

Claim 21

The Examiner now relies on the combination of **Nakamura**, **Pan** and **Gonsalves** to teach the features of claim 21.

In particular, the Examiner relies on **Pan** to teach "*inserting means for inserting a video transition effect into a combined portion of the respective highlight scenes, the inserting means including a dynamic/static scene detector to detect whether a highlight scene is a dynamic scene with much motion or a static scene with little motion*". The Examiner relies on **Gonsalves** to teach "*wherein the inserting means makes a type of the video transition effect to be inserted different according to whether the highlight scenes to be combined are the dynamic scene or the static scene.*"

First, **Gonsalves** does not disclose or suggest anything about an "inserting means [that] makes a type of the video transition effect to be inserted different according to whether the

highlight scenes to be combined are the dynamic scene or the static scene." The Examiner now (for the first time) cites portions of **Gonsalves** which allegedly teach this feature, specifically, col. 3, lines 11-14; col. 4, lines 65-67 and col. 5, lines 50-52. However, these portions generally teach inserting a special effect between two frames or fields marked as keyframes. These portions are completely silent with respect to inserting means that "makes a type of the video transition effect to be inserted different according to whether the highlight scenes to be combined are the dynamic scene or the static scene." These portions of **Gonsalves** are completely unrelated to the inserted video transition effect being different based on highlight scene being a dynamic or a static scene.

Second, the Examiner relies on **Pan** teaching of an edit effect (16, Fig. 1) that is present between normal segment 12 and a slow motion replay 18 segment to teach the claimed "*inserting means*." However, the edit effect 16 of **Pan** is not inserted into a combined portion of highlight scenes ("*inserting means for inserting a video transition effect into a combined portion of the respective highlight scenes*").

Further, the Examiner apparently concludes that because the edit effect 16 (such as a fade or wipe) is inserted between the normal video and slow motion replay, that it must be inserted based on a dynamic/static scene detector. However, **Pan** is silent as to what parameters insertion of the edit effect is based. That is, **Pan** does not disclose an inserting means that includes "*a dynamic/static scene detector to detect whether a highlight scene is a dynamic scene with much motion or a static scene with little motion*". Accordingly, the combination of the teachings of **Nakamura**, **Pan** and **Gonsalves** does not result in the claimed invention.

For all the reasons set forth above, it is submitted that independent claims 1, 4, 7, 9, 13, 14 and 21, and claims dependent therefrom, patentably distinguish over the combinations of cited prior art. Reconsideration and withdrawal of the rejections under §103 are respectfully requested.

CONCLUSION

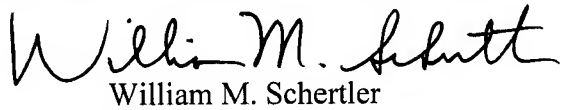
In view of the foregoing, it is submitted that all pending claims are in condition for allowance. A prompt and favorable reconsideration of the rejection and an indication of allowability of all pending claims are earnestly solicited.

If the Examiner believes that there are issues remaining to be resolved in this application, the Examiner is invited to contact the undersigned attorney at the telephone number indicated below to arrange for an interview to expedite and complete prosecution of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP



William M. Schertler
Attorney for Applicants
Registration No. 35,348
Telephone: (202) 822-1100
Facsimile: (202) 822-1111

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